

WHAT IS CLAIMED IS:

1. A tunable wavelength semiconductor laser diode comprising:
a laser diode array for producing at least two light;
a combiner for combining the light beams output by an end of the laser
5 diode array;

a lens for collimating the light beams output by another end thereof;
a grating for diffracting the light beams collimated by the lens; and
a reflector for reflecting the light beams diffracted by the grating to feed
the reflected light beams back to the laser diode array.

10 2. The laser diode of claim 1, wherein the laser diode includes a multi-channel FP (fabry-parrot) laser diode array.

3. The laser diode of claim 1, wherein the combiner has an optical waveguide configuration or an MMI (multimode interface) type passive optical waveguide configuration.

15 4. The laser diode of claim 1, wherein a wavelength of the light beam output to the fiber is controlled by an arrangement interval of the laser diode array.

5. The laser diode of claim 1, wherein a wavelength of the light beam output to the fiber is controlled by a focal length of the lens.

20 6. A tunable wavelength semiconductor laser diode comprising:
a multi-channel diode array for producing at least two light;
an AWG (array wavelength grating) for selecting one of the light beams output by an end of the multi-channel diode array, and outputting it to a fiber;
a lens for collimating the light beam output by another end thereof;

a grating for diffracting the beam collimated by the lens; and
a reflector for reflecting the beam diffracted by the grating, and feeding
the light beam to a FP (fabry-parrot) laser diode array.